CLAIMS

What is claimed is:

1. A method for multimedia communication, comprising the steps of:

communicatively interconnecting a plurality of multimedia terminals to a plurality of corresponding multipoint control units;

communicatively interconnecting the plurality of corresponding multipoint control units to a central controller;

identifying capability factors for each of the plurality of multimedia terminals and each of the plurality of corresponding multipoint control units;

responsive to a command to initiate a multimedia communication between at least two of the plurality of multimedia terminals, evaluating the capability factors for each of the at least two multimedia terminals;

comparing the capability factors for each of the at least two multimedia terminals to the capability factors of the multipoint control units communicatively interconnected to the central controller to determine a preferred interconnection between the at least two multimedia terminals; and

responsive to the comparing of capability factors, the central controller directing a communicative interconnection between the at least two multimedia terminals via at least one of the plurality of multipoint control units.

2. The method of Claim 1, wherein the capability factors include identification factors, matching factors, and routing factors.

3. The method of Claim 2, wherein the identification factors include information relating to the identity, needs, requirements, and participation authority of the plurality of multimedia terminals.

4. The method of Claim 2, wherein the matching factors include information relating to the capacity and technological orientation of each of the plurality of corresponding multipoint control units.

5. The method of Claim 2, wherein the routing factors include information relating to the most expeditious route for effecting the communicative interconnection between the at least two multimedia terminals and the corresponding multipoint control unit.

6. The method of Claim 1, further comprising:

allocating conferences on multipoint control units such that the number of conferences that can be scheduled on a conference schedule is optimized.

7. The method of Claim 6, wherein the conference schedule is optimized by combining conferences on a multipoint control unit so as to maximize the number of participants on the multipoint control unit.

8. The method of Claim 1, further comprising:

controlling multipoint control unit participant slots with the virtual multipoint control unit.

9. The method of Claim 8, wherein the virtual multipoint control unit controls the multipoint control unit participant slots as if it were an additional multipoint control unit.

10. The method of Claim 8, wherein the multipoint control unit participant slots are participant slots remaining after the multipoint control unit is optimally scheduled.

11. The method of Claim 1, wherein the command to initiate a multimedia communication is issued when the start time for a conference arrives.

12. The method of Claim 1, wherein the command to initiate a multimedia communication is issued when a participant requests an impromptu multimedia communication.

13. A system for multimedia communication, comprising:

a plurality of multimedia terminals;

a plurality of multipoint control units in communication with the plurality of multimedia terminals; and

a virtual multipoint control unit communicatively interconnected to the plurality of corresponding multipoint control units for controlling the plurality of multipoint control units from a single location.

14. The system of Claim 13, wherein at least one of the multimedia terminals is an H.320 terminal.

15. The system of Claim 13, wherein at least one of the multimedia terminals is an H.323 terminal.

16. The system of Claim 13, wherein at least one of the multimedia terminals is an H.321 terminal.

17. The system of Claim 13, wherein the multimedia terminals include a combination of H.320, H.321, and H.323 systems.

18. The system of Claim 13, wherein the multimedia terminals can communicate over an ATM network.

19. The system of Claim 13, wherein the multimedia terminals can communicate over a LAN/Internet network.

20. The system of Claim 13, wherein the multimedia terminals can communicate over an ISDN network.

21. The system of Claim 13, wherein the virtual multipoint control unit is capable of communicating with terminals of various standards.

22. The system of Claim 21, wherein the terminals are compatible with the H.320, H.321, and H.323 standards.

23. The system of Claim 13, wherein the virtual multipoint control unit in communication with the at least two multipoint control units is capable of scheduling and hosting a video conference including terminals connected to at least two of the at least two multipoint control units.

24. The system of Claim 13, wherein the virtual multipoint control unit is one of the plurality of multipoint control units.

25. A system for virtual multimedia communication, comprising:

a conference reservation manager for making conference reservations;

a conference manager for managing the conference;

a system administration tool for administering the system; and

a virtual API to allow the user to reserve conferences, control on going conferences, and receive usage information.

26. A master control unit for controlling the operation of at least one multipoint control unit, the multipoint control units being operable to provide conferencing for multiple terminals, the control unit comprising:

a multipoint control unit interface for controlling the operation and resource allocation of the at least one multipoint control unit; and

a database for recording conference reservations and conference participants;

whereby, the master control unit can schedule conferences in an efficient manner by allocating the resources of the at least one multipoint control unit in an optimal fashion.

27. The master control unit of Claim 26, further comprising:

a reporting manager for reporting the status of a conference.

28. The master control unit of Claim 26, further comprising:

an event manager for managing the initiation of conferences.

29. The master control unit of Claim 26, further comprising:

a conference reservation manager for making conference reservations.

30. The master control unit of Claim 26, further comprising:

a conference manager for managing a conference by directing participants to a selected multipoint control unit to engage in a conference.

31. The master control unit of Claim 26, further comprising:

a conference reservation manager for making conference reservations by assigning a particular multipoint control unit to a conference; and

a conference manager for managing a conference by directing participants to a selected multipoint control unit to engage in a conference, the selected multipoint control unit being selected from a group of multipoint control units consisting of the particular multipoint control unit and an alternate available multipoint control unit.

32. The master control unit of Claim 31, wherein the conference manager directs the participants to the selected multipoint control unit by providing to the particular multipoint control unit a number to which to forward a call if an alternate available multipoint control unit is selected as the selected multipoint control unit.

33. The master control unit of Claim 26, further comprising:

a system administration tool for administering the system by directing communication between endpoints in communication with a virtual multipoint control unit.

34. The master control unit of Claim 26, wherein each of the at least one multipoint control units can support X participant slots in one or more conferences, further comprising:

a resource allocation manager for allocating resources for conferences;

wherein the resources are allocated by assigning conferences to a multipoint control unit so that optimal use of the at least one multipoint control units can be obtained.

35. The master control unit of Claim 34, wherein the resources are allocated among the at least one multipoint control units as follows:

receiving a first request for a first conference, the first conference requiring support for A participants;

receiving a second request for a second conference, the second conference requiring support for B participants;

receiving a third request for a third conference, the third conference requiring support for C participants;

wherein the sum of A and B is greater than X and the sum of B and C is less or equal to X, assigning the first conference to a first multipoint control unit and assigning the second conference and third conference to a second multipoint control unit.

36. The master control unit of Claim 34, wherein the resources are allocated among the at least one multipoint control units as follows:

receiving a first request for a first conference, the first conference requiring support for A participants;

receiving a second request for a second conference, the second conference requiring support for B participants;

receiving a third request for a third conference, the third conference requiring support for C participants;

wherein the sum of A and B is greater than X, the sum of A and C is greater than X, and the sum of B and C is greater than X, assigning the first conference to a first multipoint control unit, assigning the second conference to a second multipoint control unit, and assigning the third conference to a virtual multipoint control unit, wherein the virtual multipoint control unit controls the remaining participant slots on the first and second multipoint control units as an additional multipoint control unit.

37. A multimedia conference system for making a plurality of multimedia conferences between pluralities of terminals via selected one or more multipoint control units, comprising:

a virtual multipoint control unit;

a plurality of multipoint control units;

a plurality of terminals;

means for connecting at least one of the plurality of terminals with as least one of the multipoint control units;

means for connecting at least one of the terminals with the virtual multipoint control unit; and

the virtual multipoint control unit receiving a command to initiate a multimedia conference between at least two of the plurality of terminals, assigning a conference to at least one selected multipoint control unit of the plurality of multipoint control units, and routing the participant terminals to the selected multipoint control unit.

38. The system of Claim 37, wherein the virtual multipoint control unit is one of the multipoint control units.

39. The system of Claim 37, wherein the virtual multipoint control unit consists of an external router unit.

40. The system of Claim 37, wherein the means for connecting the virtual multipoint control unit and the multipoint control unit includes connection selected from a group consisting of: direct connection, TCT/IP Intranet connection, and TCP/IP Internet connection.

41. The system of Claim 37, wherein the means for connecting at least one of the plurality of terminals with the virtual multipoint control unit includes connection selected from a group consisting of: direct connection, LAN, ATM network, Switched network, Intelligent Network, and Internet.

42. The system of Claim 37, wherein the means for connecting at least one of the plurality of terminals with at least one of the multipoint control units includes connection selected from a group consisting of: direct connection, LAN, ATM network, Switched network, Intelligent Network, and Internet.

43. The system of Claim 37, wherein the connection of at least one of the plurality of terminals with the virtual multipoint control unit is using a communication protocol selected from a group consisting of: direct connection, H.320, H.321, and H.323.

44. The system of Claim 37, wherein the connection of at least one of the plurality of terminals with at least one of the multipoint control units is using a communication protocol selected from a group consisting of: direct connection, H.320, H.321, and H.323.

45. The system of Claim 37, wherein the virtual multipoint control unit comprises a reservation module that will:

accept a request for a multimedia conference;

get conference parameters;

review the capability factors of the group of multipoint control units;

verify that the request can be accepted;

if it is accepted, notify the relevant modules inside the virtual multipoint control unit of the conference parameters, and return an approval of the request; and

if it is not accepted, reject the request.

46. The system of Claim 45, wherein the reservation factors include at least one factor selected from a group consisting of: start time, duration, number of participants, protocol type, bit rate, and terminal type.

47. The system of Claim 45, wherein the capability factors of the group of multipoint control units includes at least one factor selected from a group consisting of: a number of free audio bridges, and a number of free video mixers.

48. The system of Claim 45, wherein the approval for a conference request is a dial-in number.